HAMILTON COUNTY HEALTH DEPARTMENT
NOBLESVILLE, INDIANA
(317) 776-8500

# DIRECTIONS FOR DISINFECTING WELLS AND WATER SOURCES

These instructions are for the disinfection or treatment of wells and private water sources which have been contaminated by flood, storm waters, or other causes. If water from such wells must be used for drinking or the preparation of food before high waters have receded and before the well is properly disinfected, the water should be chlorinated or boiled before use. (See Directions for Treating Small Quantities of Drinking Water.)

After high waters have receded, or the cause of contamination is eliminated, wells can be disinfected with chlorine. A convenient form to use is sold commercially in grocery or other stores as liquid chlorine laundry bleach. (Trade names such as Clorox, Shur Fine, Snowy, Purex, Scot Lad, and many others.) Most of these products contain 5.25 percent solution or more of sodium hypochlorite when fresh, which is equivalent to 5 percent available chlorine.

## I. Determine the Amount and Add the Chlorine Disinfecting Solution

The quantity of the chlorine solution needed to disinfect a well is based upon 50 parts of chlorine to a million parts of water. To eliminate mathematical calculations, it is safe to use the following quantities and methods to disinfect the different types, sizes, and depths of wells and water sources:

A. Drilled or Driven Wells – Use one and one-fourth (1 ¼) pints the commercial 5 percent chlorine solution for each 100 feet of water in a drilled well which is four to six inches in diameter. For two-inch driven wells, or smaller, add one-quarter (1/4) measuring cup for each 25 feet of water.

   1. The measured solution should be diluted with water to make about three (3) gallons before being poured into the well. Water drawn from the contaminated well is suitable for this purpose.

   2. Pour the now diluted chlorine solution either directly into the casing of a single tubular well, or into the annular space between the outer casing and the drop pipe, of a double tubular well.

   3. If the well is sealed and the pump drop pipe is not equipped with a foot valve at the bottom, and does not have a cylinder in the way, it is also possible to pour the solution down through the pump and the drop pipe.

B. Dug Wells – Dug wells which have become contaminated should first be

pumped dry, cleaned, and the walls scrubbed down. If it is not possible to pump the well dry, the pumping should be continued until the water becomes clear. The well should then be allowed to fill, and, if the water is still not clear, it should be pumped out again.

When the water is clear, the well should be disinfected using the following quantities of 5 percent chlorine solution for each foot of depth of water in the well:

| Diameter of Well | Quantity 5 Percent Chlorine Bleach |
|---|---|
| 1 to 3 feet | ½ Pint |
| 4 feet | 1 Pint |
| 5 feet | 1 ½ Pints |
| 6 feet | 2 Pints |
| 8 feet | 3 ½ Pints |
| 10 feet | 5 Pints |

Add this quantity of chlorine bleach directly into the well interior.

C. Cisterns – Cisterns, spring collection basins, or drinking water storage tanks should be disinfected in the same manner as dug wells. Pump out, or drain, the water in the containment; scrub down the interior walls; fill or allow the tank to refill with clear water; and, if it is not known, calculate the capacity of the tank or containment by using one of the following formulas:

a. Square or Rectangular Tank – measure in feet:
Capacity (gallons) = Length x Width x Depth x 7. 5

b. Cylindrical Tank – measure in feet:
Capacity (gallons) = Diameter x Diameter x Length x 5.9

c. Then, add the amount of 5 percent chlorine solution indicated in the following table:

| Capacity (Gallons) | Quantity of 5 Percent Chlorine Bleach |
|---|---|
| 500 | 2 Quarts |

| | |
|---|---|
| 750 | 3 Quarts |
| 1,000 | 4 Quarts |
| 2,000 | 8 Quarts |
| 4,000 | 16 Quarts___ |

This amount of chlorine bleach should be poured directly into the cistern or storage tank.

II. Allow Time for Disinfection of the Water Source and Distribution System

After the well, cistern, or storage tank has been dosed with the given amount of chlorine bleach solution, it should be pumped just long enough to bring the treated water through the pump to all faucets on the distribution system. The odor at the faucets will be a good enough test to indicate chlorine presence.

If the above dosages do not produce an obvious chlorine odor in the water, add more chlorine bleach solution until a distinct odor is noticed.

Then let the well and distribution system stand for 12 to 24 hours while containing the chlorine solution. This will allow time for the chlorine solution to disinfect the well, or water source, and distribution system.

After at least 12 hours, or on the following morning, the system should be pumped to waste until no further trace of chlorine is noticeable in the water.

If you have public or municipal sewers, run each tap until the disinfectant odor disappears, while allowing the water to go down the fixture drain. If you have a septic system, it is preferable to first connect a garden hose to an outside faucet or hydrant and run the water into a roadside ditch or drainage swale, until the disinfectant odor disappears. Then, turn on each water faucet to discharge the chlorine residual in the immediate vicinity of the faucet.

III. Sample the Water for Bacteriological Analysis Before Use

Following disinfection of the water supply system, the water should be sampled for bacteriological analysis. Remember that no water should be used for drinking or food preparation, unless it is first boiled or treated, until a satisfactory report is obtained from a laboratory. The safety of water cannot be judged by color, odor, or taste. The organisms that cause water-borne disease cannot be seen.

Contact your local health department or the Division of Sanitary Engineering for assistance or advice.